# THE SINGLE CELL CULTIVATION OF YEAST.

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The method of isolating single cells of yeast by means of the pen, and growing them in tiny drops of nutrient fluid on cover-glasses in a moist chamber, as recommended by Paul Lindner, was a great advance upon the older gelatine process as practised by Hansen. The Lindner-method is in general use at the present time. It has some disadvantages, however, as will be recognised when the method, which I am about to describe, has been tried.

The pen acts by the capillary nature of its split, and it is a simple step to adopt a glass capillary, such as may be obtained by drawing out a heated piece of glass tubing until the tube is of the necessary bore. A four-inch piece of glass tubing of 4mm. bore, heated in the bunsen flame until soft, and drawn out to about thirty inches, will furnish several suitable capillaries. The heating sterilises the glass, and the capillary is ready for use when broken or cut into short lengths of, say, five inches. It is better to cut the capillary with a fine file to ensure a clean cut. A broken end will not make a good contact with the cover-glass, when the yeast-suspension is spotted. If the hand is used to cut or break the tube, the capillary can be sterilised by passing it rapidly through the flame before using.

The capillary is dipped into the suspension of yeast-cells, and inclined at an angle. The liquid rushes up the capillary but soon stops. The capillary is withdrawn, and 16 to 20 spots are dotted upon a sterile cover-glass, just as in the Lindner-method. The size of the spot can be regulated by inclining the capillary more or less to the vertical, and by the duration of contact with the cover-glass. The aim is to have the spot of such a size as can be included in the field of the microscope.

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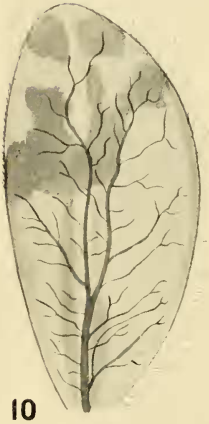






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Caudal Gills of Zygopterous Larvæ: 1-5, *Lestidæ*; 6-11, *Agrionidæ*.